# Northwest Shark Preservation Society

A Proposal to the Department of Fish & Wildlife for the Development of a Management and Conservation Plan for Washington State Coastal Waters

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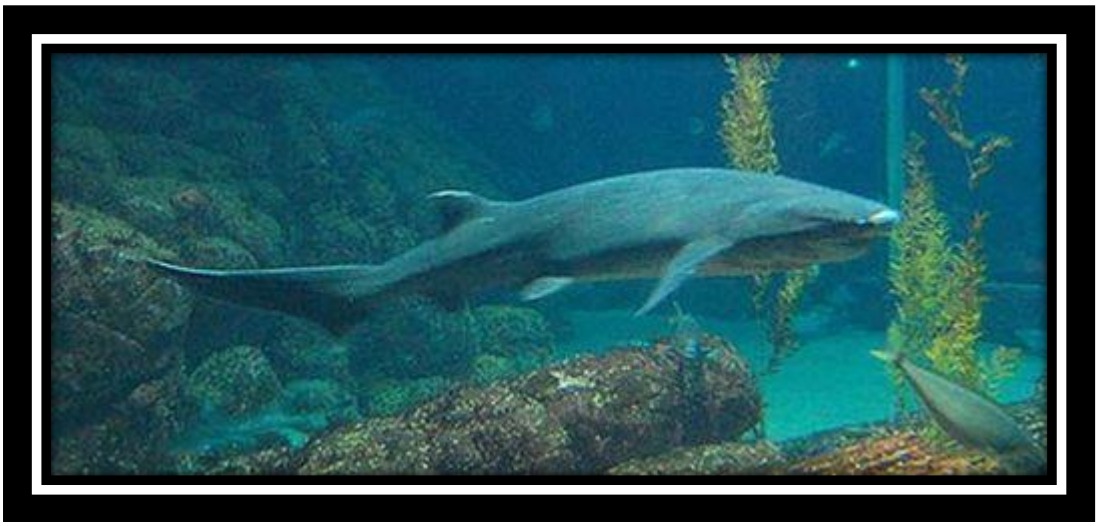

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# A Proposal to the Department of Fish & Wildlife for the Development of a Management and Conservation Plan for Washington State Coastal Waters

## *Abstract*

Global shark populations are declining at an astonishing rate. Overfishing by commercial fishermen, unregulated harvesting by recreational fishermen, and poaching by international agencies has caused the worldwide shark population to fall. The National Oceanographic Atmospheric Administration (NOAA) has estimated that shark populations in North American waters have fallen by as much as 90%.[1] Regulations have been adopted in an attempt to decrease over harvesting of sharks due to by-catch and finning. However, with recreational fishing growing each year, sharks have become a favorite of sport fisherman because of the sharks strength and resilience. In an attempt to reduce the senseless killing of sharks as trophies, many states have adopted catch and release regulations. However, very few management systems exist to maximize post release mortality.[2]

Currently, the state of Washington lists all shark species as a bottom fish for the purpose of regulation of catch limits. The current regulations states that bottom fish have a creel limit of 12 to 15 fish per day, per angler which is dependent on fishing location. By changing the current regulations, shark species would be placed into a specific category that would regulate shark specific fishing activities.

This proposal is an attempt to form a coherent catch and release policy based on recent research and observation. Our goal is to create a policy that will help reduce potential overfishing, enforce catch and release for all non-banned shark species, and develop regulations for fishing gear and techniques that will reduce post release mortality.

Keywords: sevengill, shark, fishing proposal, fishing ban, catch and release

[1] Jackson, J., Kirby, M.X., Berger, W.H., Bjorndal, K.A., Botsford, C.W., Bourque, B.J., Bradbury, R.H., Cooke, R., Erlandson, J., Estes, J.A., Hughes, T.P., Kidwell, S., Lage, C.B., Leniham, H.S., Pandolfi, J.M., Peterson, C.H., Steneck, R.S., Tegner, M.J., & Warner, R.R. "Historical overfishing and recent collapse of coastal ecosystems." Science, DOI:10.1126/Science (2001), pg 293,629.

[2] Davis, B. (n.d.). Improving the management and conservation of large coastal sharks for recreational fishing in the state of florida. *Policy Brief: Florida Fish and Wildlife Conservation Commission Shark Management*, Retrieved from http://fw.oregonstate.edu/pdfs/CapstoneProject_final_editsaccepted.pdf

The current proposal closes “angling statewide for sixgill, sevengill, and thresher sharks.”[3]

## Introduction

Overfishing of any apex predators, such as a shark, can lead to a major disturbance in the marine ecosystem.[4] The marine ecosystem is in part maintained by a delicate balance between predator and prey where the shark is at the top of the food web. With the loss of as much as 90% of the North American shark population over the last 50 years,[5] this balance is in serious jeopardy. At the very least every effort must be made to, slow down the loss of these predators or we will start to see significant changes in both the quantity and quality of other marine species.

This proposal to the Washington Department of Fish & Wildlife, (WDFW), will show that prudent catch and release regulation can help reverse the effects of regional over fishing and at the same time, preserve the sport of recreational shark fishing.

## Sharks Common to the Pacific Northwest

The International Union for the Conservation of Nature (IUCN) Red List, an international version of the Endangered Species Act, lists a total of 85 species of shark that are either native, introduced or vagrant to the west coast of the United States. Out of the 85 species, 24 have a decreasing population trend, 3 are stable, and 58 have an unknown population trend.

While there are species of sharks that are common to the northwest region, other species of sharks are highly migratory and pass through our waters while migrating or following prey species. The Highly Migratory Species (HMS) should also be included in the protection although not specifically named. Including all species of shark in the shark retention ban would provide a basic blanket protection for these top predators.

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[3] http://wdfw.wa.gov/fishing/regulations/rule_proposals/comments/proposal.php?id=133

[4] Griffin, E., Miller, K. L., Freitas, B., & Hirshfield, M. (2008, July). *Predators as prey: Why healthy oceans need sharks*. Oceana. Retrieved from http://oceana.org/sites/default/files/o/fileadmin/oceana/uploads/Sharks/Predators_as_Prey_FINAL_FINAL.pdf

[5] Loren, MCCLENACHAN. "Documenting Loss of Large Trophy Fish from the Florida Keys with Historical Photographs." February 5, 2008. http://www.sefsc.noaa.gov/sedar/download/SEDAR23_RD_10_McClenachan_09.pdf?id=DOCUMENT

Currently, Washington State law places all shark species in the same category as typical bottom fish. This effectively places a daily creel limit of 12 to 15 fish per day, per angler. While most bottom fish populations can support that creel limit, sharks cannot.

## Common Characteristics of Coastal Sharks

Most sharks, including the species that inhabit the coastal waters off of Washington State, share certain common characteristics. These traits make the shark more vulnerable to over-fishing than common bottom fish. These traits include:

- Slow growth to maturation
- Long reproductive cycles and life spans
- Low fecundity

These traits, when taken as a whole are the reason for the generally low reproductive potential seen in many coastal sharks.[6] However, many of these sharks, including the Broadnose Seven Gill Shark, have little or no known data documenting this theory. It is clear that more research is needed to fully understand the biological effects that overfishing has on the survivability of these sharks.

## Overview of Current State Laws

The current regulation as stated in the Sport Fishing Rules contains the definition of Bottomfish as including:

> *" Pacific cod, Pacific tomcod, Pacific hake (or whiting), walleye, pollock, all species of dabs, sole and flounders (except Pacific halibut), lingcod, ratfish, sablefish, cabezon, greenling, buffalo sculpin, great sculpin, wolfeel, giant wrymouth, plainfin midshipman,* ***all species of shark****, skate, rockfish, rattail, and surf perches excluding shiner perch"*[7]

[6] Castro, J.I., Woodley, C.M., & Brudek, R.L. (1999). A Preliminary evaluation of the status of shark species. FAO Fisheries Techincal Paper, No. 380. Rome, FAO. 72p.

[7] *Sport Fishing Rules*, Effective Date May 1, 2012 to April 30, 2013, Washington Department of Fish and Wildlife, pg.10.

In each of the marine fishing areas listed in the Sport Fishing Rules, there are special restrictions that govern the types and sizes of "bottomfish" that can be taken. The following table is a summary of each marine area concerning the limit on bottomfish as well as any restriction on shark fishing.

| Marine Area | Location | Bottom Fish Limit | Restrictions on Sharks |
|---|---|---|---|
| 1 | Ilwaco | 12 | No Restrictions |
| 2 | Westport-Ocean Shores | 12 | No Restrictions |
| 3 | LaPush | 12 | No Restrictions |
| 4 | Neah Bay | 12 | No Restrictions |
| 5 | Sekiu and Pillar Point | 15 | Sixgill Protection |
| 6 | East Juan de Fuca Strait | 15 | Sixgill Protection |
| 7 | San Juan Islands | 15 | Sixgill Protection |
| 8-1 | Deception Pass, Hope Island and Skagit Bay | 15 | Sixgill Protection |
| 8-2 | Port Susan and Port Gardner | 15 | Sixgill Protection |
| 9 | Admiralty Inlet | 15 | Sixgill Protection |
| 10 | Seattle/ Bremerton Area | 15 | Sixgill Protection |
| 11 | Tacoma-Vashon Island | 15 | Sixgill Protection |
| 12 | Hood Canal | 0 | Bottomfish CLOSED |
| 13 | South Puget Sound | 15 | Sixgill Protection |

**Table of Bottomfish Regulations**[8]

There is only one shark species that is specifically named as a protected species, the Sixgill, and that is in only 9 of 13 designated areas, not including the Hood Canal fishing area where bottom fishing is closed.

The first area of concern is the retention limit of 12-15 fish per day. While bottomfish that reproduce rapidly or in large numbers can support a larger retention limit, fish with longer reproductive cycles or a lower number of offspring cannot.

Another source of concern is the possession limit assigned to the bottomfish category. The possession limit for "bottomfish" in a marine area is "Two daily limits in any form", meaning that if an angler was so inclined he could capture and keep 12 to 15 sharks of one species and 12 to 15 sharks of another

[8] *Sport Fishing Rules*, Effective Date May 1, 2012 to April 30, 2013, Washington Department of Fish and Wildlife, pg 98-123.

species.[9] While the possession limit is aimed mainly at overnight anglers, the regulations need to be worded in a manner that would restrict the possession of two daily limits of sharks.

While the current proposal does address and regulate fishing for sharks it fails to address the entire problem. With sharks in decline there is a need for research on elasmobranch species. By regulating fishing and require reporting of caught species the amount of data that could be gained would greatly help researchers in data collection. The proposed rule change also fails to address shark mortality as by-catch. While the recommendations do not address by-catch, they are a step in the right direction.

## Recommendations

We recommend the following changes/additions to the coastal and inland water fishing regulations.

**Change the classification of all shark species to "Benthic and Pelagic Sport Fishes."**

Washington State classifies all shark species as "Bottom Fish" thereby subjecting them to the same creel limits and fishing practices as all other benthic species of fish. Most bottom fish species demonstrate rapid growth and reach maturity at a younger age resulting in an increased ability to reproduce.[10] Sharks, on the other hand, exhibit slow growth and take many years to reach a relatively large size.[11] They produce few offspring that must then live on their own soon after birth.[12] Sharks also reach sexual maturity late in life and breeding cycles are often as much as two years.[13]

By developing a separate category for all shark species called, "Benthic and Pelagic Sport Fishes," regulations can be developed that target only sharks. Furthermore, by separating sharks from the bottom fish

[9] *Sport Fishing Rules*, Effective Date May 1, 2012 to April 30, 2013, Washington Department of Fish and Wildlife, pg 98.

[10] http://www.sharksavers.org/en/education/biology/differences-between-sharks-and-bony-fish-more-than-just-a-skeleton/

[11] http://www.sharksavers.org/en/education/biology/differences-between-sharks-and-bony-fish-more-than-just-a-skeleton/

[12] http://www.sharks-world.com/shark_reproduction.html

[13] http://www.sharksavers.org/en/education/biology/shark-and-ray-reproduction/

category, future regulations involving creel limits and fishing practices that pertain to bottom fish can be modified without concern for the shark species.

**Create a subcategory for endangered sharks and designate that species as "No Take."**

Create a subcategory called "No Take" for shark species that are considered endangered. This would include, but not be limited to, the following species of shark:

- Great White Shark- (*Carcharodon carcharias)*
- Bluntnose Sixgill Shark- (*Hexanchus griseus)*

By placing these endangered species in a separate class, they are removed from the population of sharks that recreational fishermen can target.

**Permits for Scientific Research**

Permits for the capture of sharks classified as "No Take" can be issued. These permits are to be issued for the purpose of research only and no harvesting of sharks will be permitted. Individuals and organizations requesting such permits would be held to the same standards and bear the same burden of proof following the same process in order to obtain the research permits.

**Catch and Release**

Classify fishing for a species of shark not covered in the "No Take" category, within Washington State coastal waters, into a catch and release only classification.

Catch and release programs for sharks have been adopted in many states as a means to protect the shark populations. Some fishery locations, such as Florida and Texas, actively encourage catch and release for recreational fishing. Shark fishing tournaments have become very popular, mandating catch and release for all tournament landings.

There are several benefits to a catch and release fishery. First, anglers gain an expertise in a particular fishery and develop a "limit the kill"

instead of "kill the limit" mentality that will carry over to other fisheries[14]. Catch and release practices can also influence the population structure and density of the fish population. Other species of fish in a "No Take" classification have been found to have population shifts from a normal distribution harming the population. Catch and release fishing can have the same desired effect and restore a natural population distribution[15].

Controlled studies have shown that most fish released after hook-and-line capture survive.[16] Data shows that the mortality rate among large sports fish is low as long as certain catch and release guidelines are followed. These guidelines are outlined below.

**Place restrictions on gear type used to catch sharks.**

The use of species specific fishing gear by recreational anglers has shown to reduce injury, reduce animal exhaustion, and post release mortality.[17] Barbless circle hooks not only aide in easy removal, but it has been shown that they reduce "gut hooking" which results from the shark swallowing the hook. "Many studies have been done on barbless hooks versus non and conclude that barbless hooks decrease the amount of tissue damage at point of entry and that these findings were consistent for most marine fish."[18] Conventional hooks, called "J-hooks" are known to cause more internal tissue damage, leading to possible infection.[19] The use of tackle that allows for a faster retrieval of the shark also helps reduce mortality by reducing exhaustion.[20]

[14] Malchoff,M.H., & MacNeill, D.B. (1995). Guidelines to increase survival of released sport fish. *Sea Gran:Cornell Cooperative Extension*. (http://dspace.library.cornell.edu/bitstream/1813/3222/2/Guidelines%20to%20increase%20the%20Survival%20of%20Sportfish.pdf).

[15] Malchoff,M.H., & MacNeill, D.B. (1995). Guidelines to increase survival of released sport fish. *Sea Gran:Cornell Cooperative Extension*. (http://dspace.library.cornell.edu/bitstream/1813/3222/2/Guidelines%20to%20increase%20the%20Survival%20of%20Sportfish.pdf).

[16] http://myfwc.com/research/saltwater/fish/other/catch-release-fishing/

[17] Muoneke, M.I., & Childress, W.M. (1994). Hooking mortality: a review for recreational fisheries. *Reviews in Fisheries Science 2*:123-256.

[18] Davis, B. (n.d.). Improving the management and conservation of large coastal sharks for recreational fishing in the state of florida. *Policy Brief: Florida Fish and Wildlife Conservation Commission Shark Management*, Retrieved from http://fw.oregonstate.edu/pdfs/CapstoneProject_final_editsaccepted.pdf. pg21

[19] Cooke, S.J., Philipp, D.P., Dunmall, K.M., & Schreer, J.F. (2001). The influence of terminal tackle on injury, handling time, and cardiac disturbance of rock bass. *North American Journal of Fisheries Management 21*: 333-342.

[20] http://myfwc.com/fishing/saltwater/recreational/sharks/

**License Endorsements and Training**

Standard fishing licenses would be required along with a special endorsement for anyone that desires to participate in the catch and release program. This endorsement could be part of a tagging program aimed at helping obtain current research data on shark populations. Before an angler can receive this endorsement, he would be required to complete a training class on safety, proper fishing techniques, tagging procedures, and correct catch and release techniques. Licensed guides would also be required to obtain this certification and this license could serve as blanket coverage for all paying fishermen. This training would be provided by the Northwest Shark Preservation Societies training staff and would be a life time endorsement.

**Required Catch Reporting**

In addition to training the Northwest Shark Preservation Society will maintain a catch database on its website that will help monitor populations and trends. This data will be available to the general public and scientific community alike. A current database will allow for early warning to critical shifts in populations as well as serve as an early warning system for ecosystem changes.

## Economic Benefits

"The significant economic and environmental impact recreational shark fishing has on local communities make conservation for a sustainable fishery not only preferable but necessary"[21]. The economic benefits to the coastal areas of Washington State would be two-fold. First, it would allow the current businesses that focus on shark fishing to continue to operate. This would include the currently licensed fishing guides and tackle shops. Second, with increased emphasis on shark fishing, new business would flow into the area in terms of anglers who would need to purchase gear, fuel, overnight accommodations, food and beverages and charter services. The increased research opportunities would generate publicity in the form of

[21] http://ultimatesharkchallenge.squarespace.com/tournament-news-updates/2012/3/22/shark-tarpon-alliance-benefits-conservation.html

magazine articles, research articles and perhaps television shows. This would help drive an increased awareness of the sport and bring in new anglers that would not otherwise visit our coastal communities. Research would also bring in additional dollars with the purchase of equipment and community services. With the addition of natural publicity that surrounds this sport, the economic benefit to the local community would be substantial.

## Summary of Proposed Changes/Additions to Fishing Regulations

1. Change the current classification of all shark species from "Bottomfish" to "Benthic and Pelagic Sport Fishes."
2. Create a subcategory that would include any shark species that is considered endangered and designate that species as "No Take."
3. Place sharks listed as endangered into the "No Take" Category.
4. Make a special permit available for research on restricted species of sharks.
5. Place fishing for any non-banned species of shark, within Washington State coastal waters, into a catch and release only classification.
6. Place restrictions on gear type used to catch sharks.
7. Make Shark fishing a regulated activity to ensure that all regulations are strictly adhered to.
8. Endorsement stamps for participation in the catch and release program.
9. Participants of shark fishing must complete a training class on safety, proper fishing techniques, and correct catch and release procedures.
10. Licensed Guides will be required to obtain the training certificate before any fishing for shark can be done. The guide's certification can be considered blanket coverage for any paying angler.
11. Training will be provided by the Northwest Shark Preservation Society and consist of a detailed video showing the proper catch and release techniques used by NOAA in their shark studies. The training will also consist of a thorough walk through of each individual step in proper catch and release procedures.
12. Require reporting of caught shark species to the Northwest Shark Preservation Society. This reporting will allow for analysis of population trends and give a better understand of the population in Washington State waters.

## Conclusion

It is our belief that the new proposal under current consideration that in essence close all shark fisheries in Washington State coastal waters is premature, reactionary and not based on any available research. We believe that the adoption of our recommendation would not only help with the potential overfishing of sharks, but also benefit the state, local fishermen, communities and the sport of fishing as a whole.